

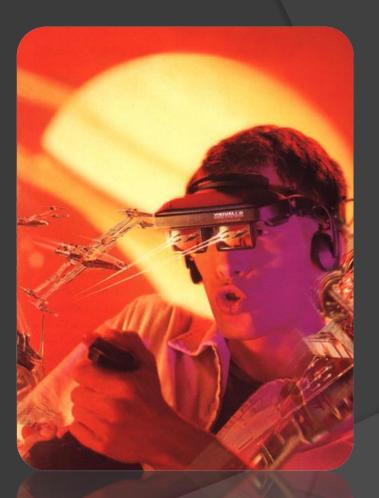
John E. Williamson



Virtual iO

Backed by Logitech and Amiga





Platforms

iOS, Android, Wii, PSN, XBLA, PS3, PS1, Xbox 360, Xbox, Dreamcast, Web, PC, VR, Motion Based Ride

Genres

FPS, RTS, Survival Horror, Arcade/Casual, F2P, MOBA, Simulation





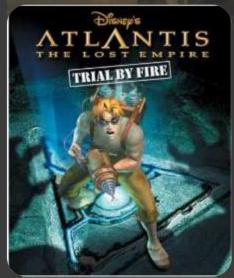
Writer/Producer/Designer





















KONAMI



GOAL OF THIS PRESENTATION

LEARNING CREATION NOT CONSUMPTION

"Learning is creation, not consumption. Knowledge is not something a learner absorbs, but something a learner creates."





The goal is not to turn this



Into this

```
<?php
                                                                                                  for (\$i1 = 0; \$i1 < 2; \$i1 + t) \le 1:
                                                                                                   // Loop 1.
                                                                                                   for ($i2 = 0; $i2 < 2; $i2++) | eak;
switch ($i)
                                                                                                    // Loop 2.
                                                                                                    switch ($i2 % 2) {
                      for ($i2 = 0; $i2 < 2; $i2++) {
// Loop 2.
                                                                                                      case 0:
                                                                                                       continue;
 if ($i > 10) {
                                                                                                       break;
     breake 1:
                    break;
gt
print '[' . $i2 . ']<br>';
  echo $i; echo
                                                                                                    print '[' . $i2 . '] < br > \}
                                                                            t(stwo)
e($a = cSWILC11110
          break;
                                                                            cho sa[1] Case 0:
                                                                                                   print $i1 . '<br>';
      case 2:
                                                                                        echo
          echo "i equals 2";
                                                                                        break;
$i = 1; break
                                                                                     case 1:
                                                                                        echo "i equais...
  if ($i > 10) {
                                                                                        break;
    break; ho "lis n
                                      } while (0);
                                                                                     case 2:
  echo $i:
                                                                                       echo "i equals 2";
for (\$i = 1, \$j = 0; \$i <= 10; \$j == \$i, print \$i
```

But this. Engaged, Curious Students



Curiositu IS THE WICK IN THE CANDLE OF LEARNING

William Arthur Ward



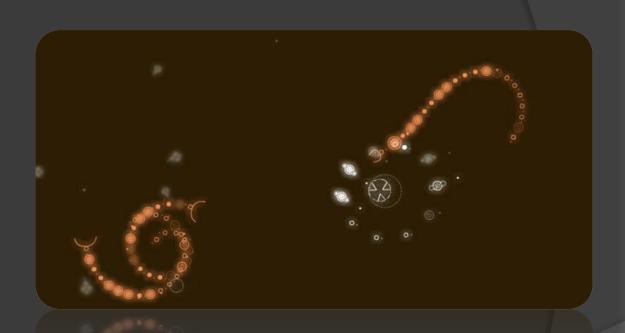
VIDEO GAMES ARE BAD FOR YOU?

THAT'S WHAT THEY
SAID ABOUT
ROCK 'N' ROLL

SHIGERU MIYAMOTO

Video Games are art Museum of Modern Art

- Pac-Man (1980)
- Tetris (1984)
- Another World (1991)
- Myst (1993)
- SimCity 2000 (1994)
- vib-ribbon (1999)
- The Sims (2000)
- Katamari Damacy (2004)
- EVE Online (2003)
- Dwarf Fortress (2006)
- Portal (2007)
- flOw (2006)
- Passage (2008)
- Canabalt (2009)



Video Games are art US Supreme Court



Tech » Gadgets | Cyber Security | Innovation Nation

Supreme Court sees video games as art



By John D. Sutter, CNN

June 27, 2011 8:33 p.m. EDT | Filed under: Gaming & Gadgets



The "God of War" games from Sony are considered violent, but the Supreme Court says such games still have protection as art.

STORY HIGHLIGHTS

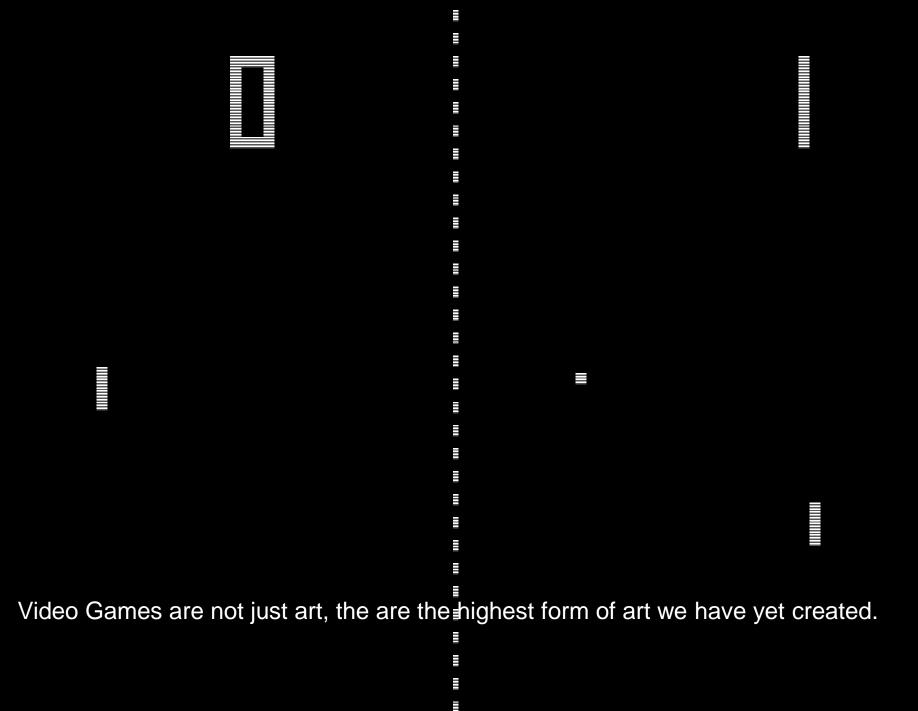
- Supreme Court rules against California ban on violent video game sales to minors
- A sub-point of majority opinion: Video games are art
- The court says games deserve First Amendment protections
- The fact that they are "interactive" does not change their nature, court says

(CNN) -- Maybe it helps for the nation's highest court to say it, too?

Video games are art, and they deserve the exact same First Amendment protections as books, comics, plays and all the rest, the U.S. Supreme Court said Monday in a ruling about the sale of violent video games in California.

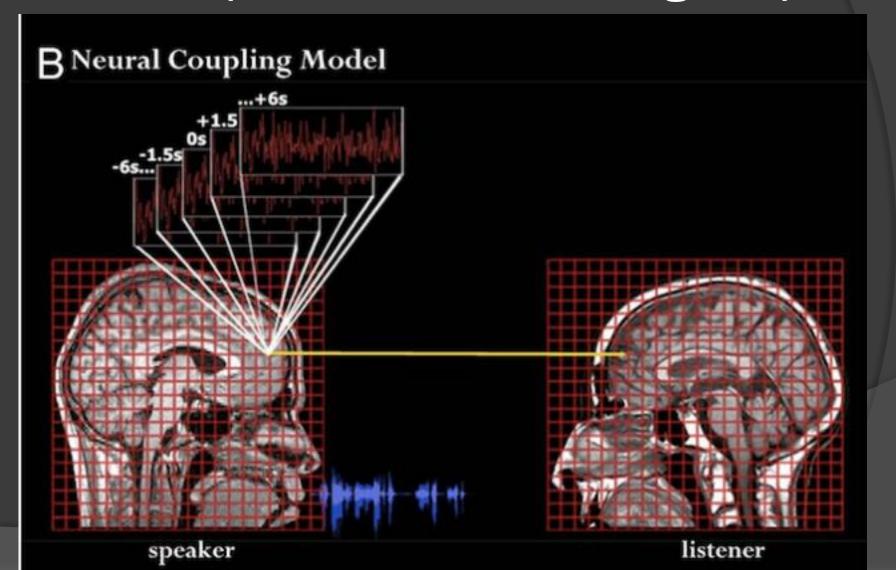
California had tried to argue that video games are inherently different from these other mediums because they are "interactive." So if a kid has to pick up a controller and hit the B button -- over and over again until he starts to get thumb arthritis -- to kill a person in a video game, that's different from reading about a similar murder the state said.

STORY TELLING





We are evolved for story telling Similar parts of the brain light up.

















HOW STORYTELLING AFFECTS THE BRAIN

NEURAL COUPLING

A story activates parts in the brain that allows the listener to turn the story in to their own ideas and experience thanks to a process called neural coupling.

MIRRORING

Listeners will not only experience the similar brain activity to each other, but also to the speaker.



DOPAMINE

The brain releases dopamine into the system when it experiences an emotionally-charged event, making it easier to remember and with greater accuracy.

CORTEX ACTIVITY

When processing facts, two areas of the brain are activated (Broca's and Wernicke's area). A well-told story can engage many additional areas, including the motor cortex, sensory cortex and frontal cortex.

http://www.gamasutra.com/blogs/ZacGuo/20141203/231396/How_To_Reinvigorate_Learning_By_Using_Play.php

To get empathy for a character, you need choices. Empathy can release Oxytocin







Corpus Callosum Connects both sides

of the brain.



Sensory Cortex

Controls tactile feedback while playing an instrument or dancing.



Auditory Cortex

Listens to sounds; perceives and analyzes tones.



Hippocampus

Involved in music memories, experiences and context.



Visual Cortex

Involved in reading music or looking at your own dance moves.



Cerebellum

Involved in movement while dancing or playing an instrument, as well as emotional reactions.



Motor Cortex

Involved in movement while dancing or playing an instrument.







Prefrontal Cortex-

Controls behavior, expression and decision making.



Nucleus Accumbens & Amygdala

Involved with the emotional reactions to music.

Playing Videogames, like playing music, light up many areas of the brain

Video Games Allow Better Stories



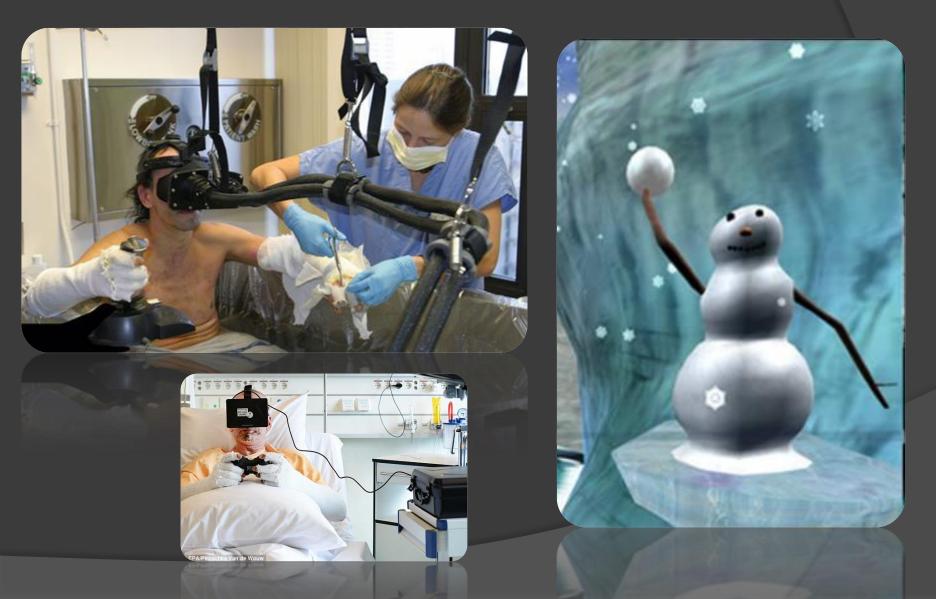
http://www.edutopia.org/blog/neurologist-makes-case-video-game-model-learning-tool

Video Games Allow Better Stories

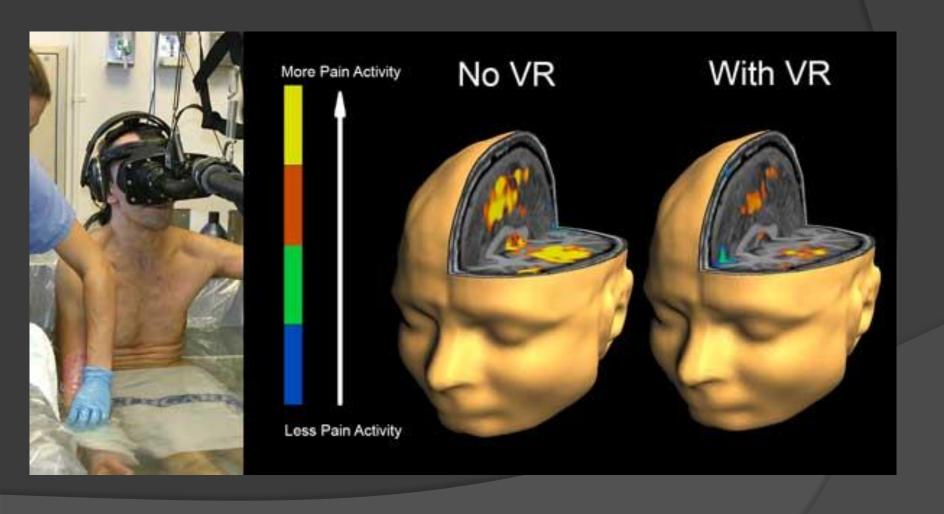


http://www.edutopia.org/blog/neurologist-makes-case-video-game-model-learning-tool

VR Games Change Pain Perception



VR Games Change Pain Perception



GAMES PRODUCTION

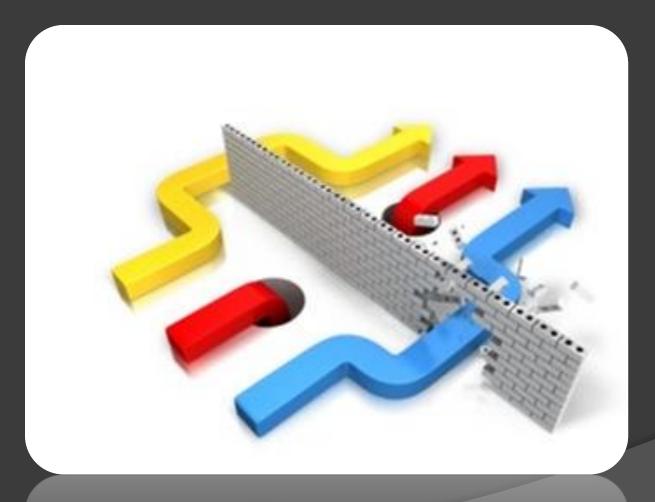
Barriers to Entry



Hardware
Software
Distribution
Licensed Developer
Training
Financing



No Barriers to Entry EverY tool is free

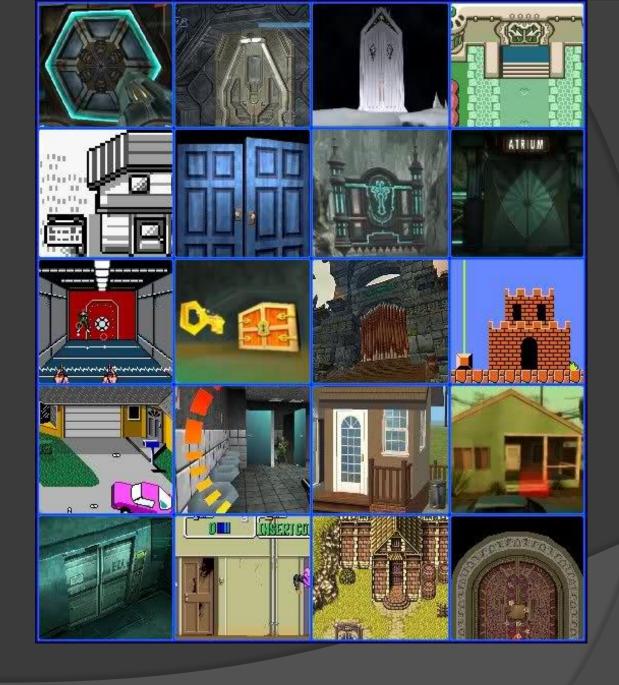


Game Developers

- Designer
- Producer
- Programmer
- Artists 2D/3D
- Audio
- QA
- Publisher
- PR



Doors



Game Developers

Designer

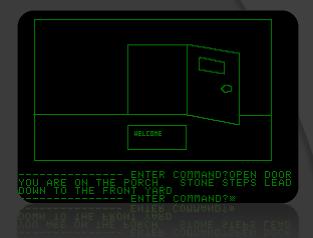
- Are there doors in your game?
 - Can the player open them?
 - Can the player open every door in the game?
- Or are some doors for decoration?
 - How does the player know the difference?
 - Are doors you can open green and ones you can't red?
 - Is there trash piled up in front of doors you can't use?
 - Did you just remove the doorknobs and call it a day?
- Can doors be locked and unlocked?
 - What tells a player a door is locked and will open, as opposed to a door that they will never open?
 - Does a player know how to unlock a door? Do they need a key?
 - To hack a console?
 - To solve a puzzle?
 - To wait until a story moment passes?
- Are there doors that can open but the player can never enter them?
- Where do enemies come from?
 - Do they run in from doors?
 - Do those doors lock afterwards?



Game Developers

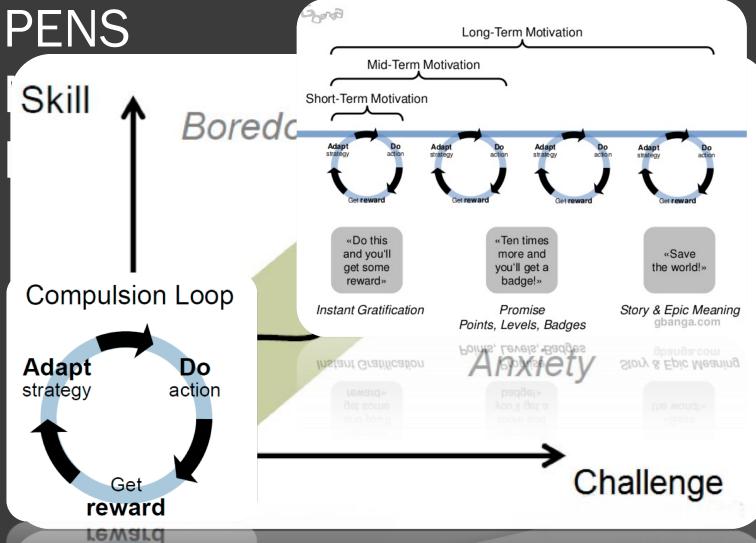
Designer

- How does the player open a door?
 - Do they just walk up to it and it slides open?
 - Does it swing open?
 - Does the player have to press a button to open it?
- Do doors lock behind the player?
- What happens if there are two players?
 - Does it only lock after both players pass through the door?
 - What if the level is REALLY BIG and can't all exist at the same time?
 - If one player stays behind, the floor might disappear from under them. What do you do?
 - Do you stop one player from progressing any further until both are together in the same room?
 - Do you teleport the player that stayed behind?
- What size is a door?
- Does it have to be big enough for a player to get through one at a time or both?
- What about co-op players?
 - What if player 1 is standing in the doorway does that block player 2?
 - What about allies following you?
 - How many of them need to get through the door without getting stuck?
- What about enemies? Do mini-bosses that are larger than a person also need to fit through the door?



- Designers
 - Game Designers
 - Level Designers
 - Art Designers
 - UX Designers

Game Theory: What Is Fun?



Challenge

- Programmers (make the door open)
 - Al
 - Physics
 - Graphics
 - Rendering
 - Tools
 - Gamelogic
 - Menu



- Artist (make the door)
 - 2D Artists (concept art)
 - Menu Artists
 - 3D Artists
 - SFX Artists
 - Texture Artists
 - Animators
 - Character modelers
 - Level Builders



- Musicians (give the door sound)
 - Composers
 - Sound FX
 - Menu
 - Voice Overs (actors)





- Writers (tell the player how to open door)
 - Story
 - Dialogue
 - Loading Screens/Menus





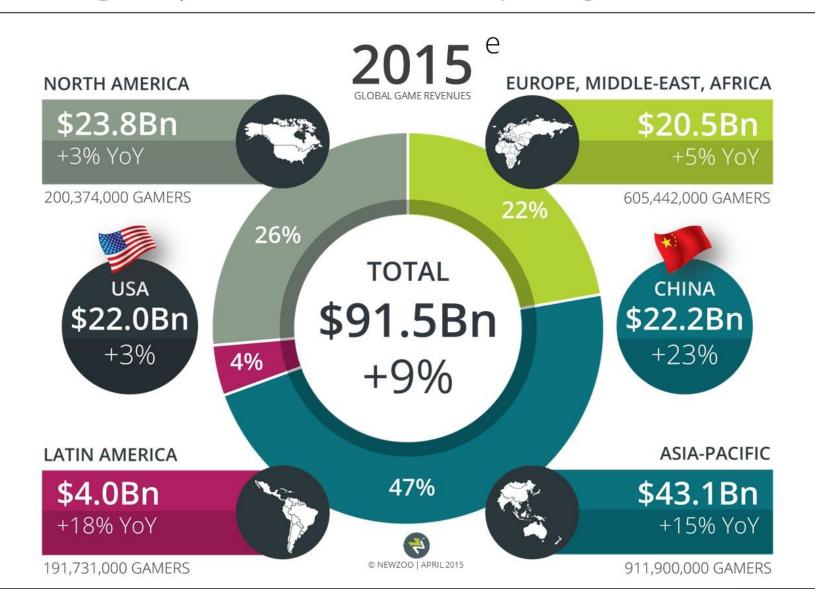
- Creative Director: "Yes, we definitely need doors in this game."
- Project Manager: "I'll put time on the schedule for people to make doors.
- Designer: "I wrote a doc explaining what we need doors to do."
- Concept Artist: "I made some gorgeous paintings of doors."
- Art Director: "This third painting is exactly the style of doors we need."
- Environment Artist: "I took this painting of a door and made it into an object in the game."
- Animator: "I made the door open and close."
- Sound Designer: "I made the sounds the door creates when it opens and closes."
- Audio Engineer: "The sound of the door opening and closing will change based on where the player is and what direction they are facing."
- Composer: "I created a theme song for the door."
- FX Artist: "I added some cool sparks to the door when it opens."
- Writer: "When the door opens, the player will say, 'Hey look! The door opened!"
- Lighter: "There is a bright red light over the door when it's locked, and a green one when it's opened."
- Legal: "The environment artist put a Starbucks logo on the door. You need to remove that if you don't want to be sued."
- Gameplay Programmer: "This door asset now opens and closes based on proximity to the player. It can also be locked and unlocked through script."
- Al Programmer: "Enemies and allies now know if a door is there and whether they can go through it."
- Network Programmer: "Do all the players need to see the door open at the same time?"
- Release Engineer: "You need to get your doors in by 3pm if you want them on the disk."

- Release Engineer: "You need to get your doors in by 3pm if you want them on the disk."
- Ore Engine Programmer: "I have optimized the code to allow up to 1024 doors in the game."
- Tools Programmer: "I made it even easier for you to place doors."
- Level Designer: "I put the door in my level and locked it. After an event, I unlocked it."
- UI Designer: "There's now an objective marker on the door, and it has its own icon on the map."
- Combat Designer: "Enemies will spawn behind doors, and lay cover fire as their allies enter the room. Unless the player is looking inside the door in which case they will spawn behind a different door."
- Systems Designer: "A level 4 player earns 148xp for opening this door at the cost of 3 gold."
- Monetization Designer: "We could charge the player \$.99 to open the door now, or wait 24 hours for it to open automatically."
- QA Tester: "I walked to the door. I ran to the door. I jumped at the door. I stood in the doorway until it closed. I saved and reloaded and walked to the door. I died and reloaded then walked to the door. I threw grenades at the door."
- UX / Usability Researcher: "I found some people on Craigslist to go through the door so we could see what problems crop up."
- Localization: "Door. Puerta. Porta. Porte. Tür. Dør. Deur. Drzwi. Drws. 문"
- Producer: "Do we need to give everyone those doors or can we save them for a pre-order bonus?"
- Publisher: "Those doors are really going to help this game stand out during the fall line-up."
- © CEO: "I want you all to know how much I appreciate the time and effort put into making those doors."
- PR: "To all our fans, you're going to go crazy over our next reveal #gamedev #doors #nextgen #retweet"
- Community Manager: "I let the fans know that their concerns about doors will be addressed in the upcoming patch."
- Customer Support: "A player contacted us, confused about doors. I gave them detailed instructions on how to use them."
- Player: "I totally didn't even notice a door there."

GAMES ARE HUGE TO YOUR STUDENTS

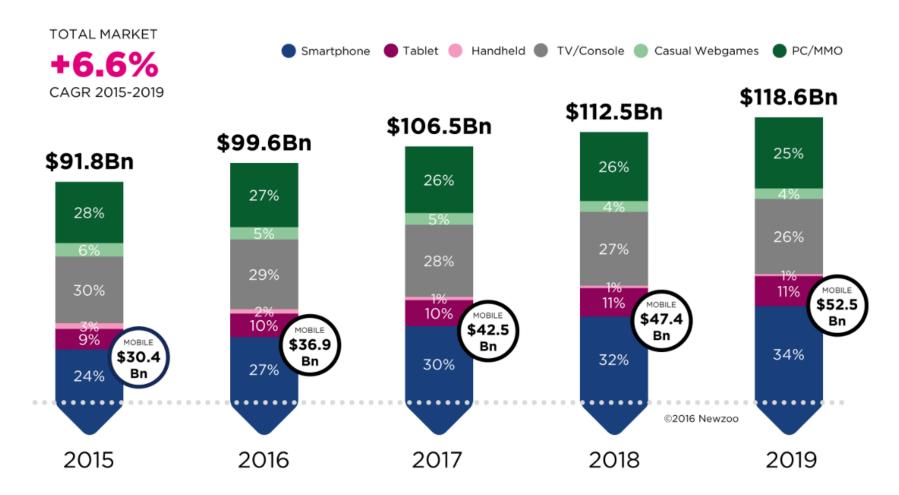
The Global Games Market | 2015

Per Region | US and China Competing for Number 1



2015-2019 GLOBAL GAMES MARKET

FORECAST PER SEGMENT TOWARD 2019



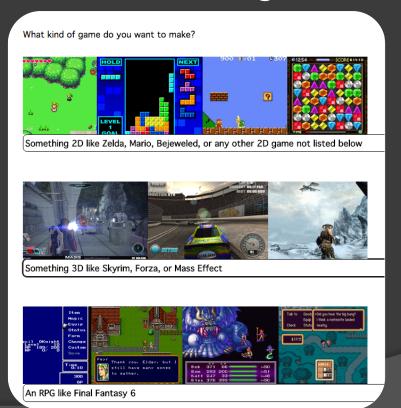
Source: ©Newzoo | Q2 2016 Update | Global Games Market Report Premium newzoo.com/globalreportpremium/



RESOURCES: GAME ENGINES

Sorting Hat

- www.sortingh.at
- Help decide which engine to use

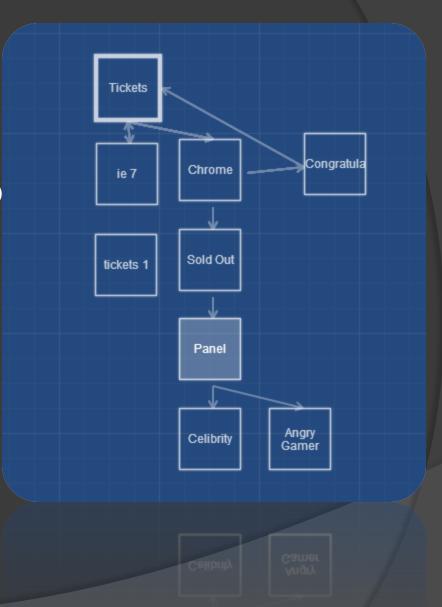


Text Game

Simple Graphics
Simple to Complex Op

- Difficult to Share

Advice: Plan Ahead

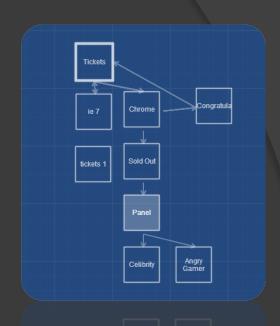


TWINERY.ORG Free

Simple Graphics
Simple to Complex Options

Difficult to Share



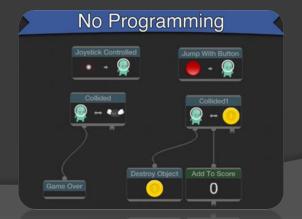




Gamepress iPad: Free

Complete Graphical Object Programming Tool
Chest

No Typing Required
Make Complete Games
(score, lives, jumping, shooting, levels, etc.)
Use your own art.





Sploder.com Web: Free

Make Your Own Games

Existing Templates

(platformer, topdown shooter, Angry Birds/Physics games)

Complete Tool Chest, but restrictions.

Can't import art









Scratch.mit.edu Web: Free

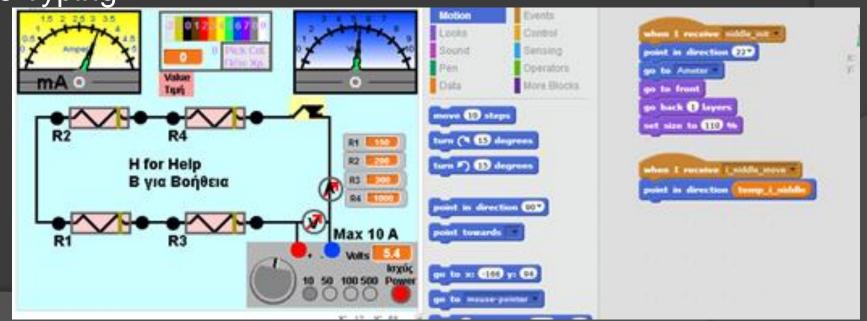
Robust Graphical Object Programming

Extremely Flexible

Great Tutorials, Books, Lesson Plans

2D Only

No Typing

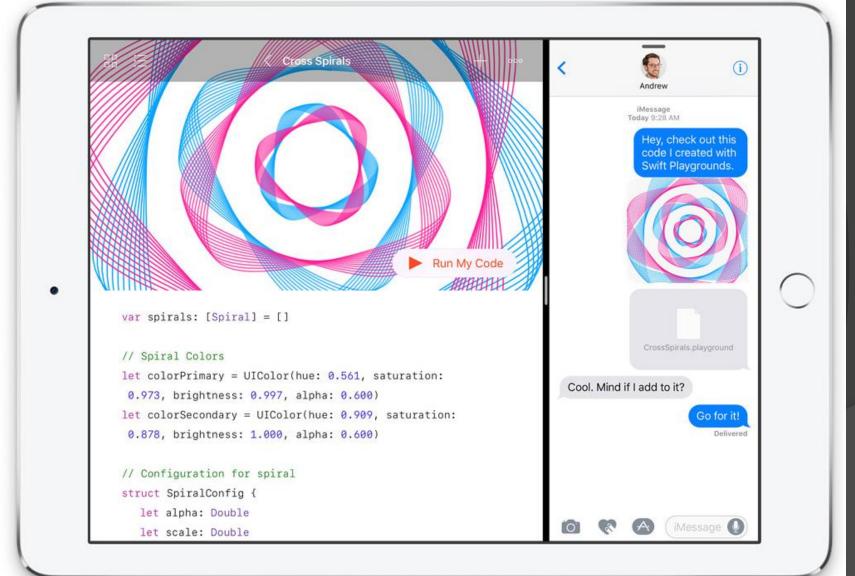


Swift Playgrounds From Apple

- Not a popular language
- But will run on all Apple products
- Designed to be concise and "resilient"
- New iPad support due this Fall



Swift Playgrounds Integrated lessons



Swift Playgrounds Challenges, Tests











Challenge: Use the AND, OR, and NOT operators to navigate Byte through the world.

Each of these operators influences the way your conditional code runs:

- The NOT operator (!) inverts a Boolean value, saying, "if NOT this condition, do this".
- The AND operator (&&) combines two conditions and runs the code only if both are true.
- The OR operator (||) combines two conditions and runs the code if at least one is true.

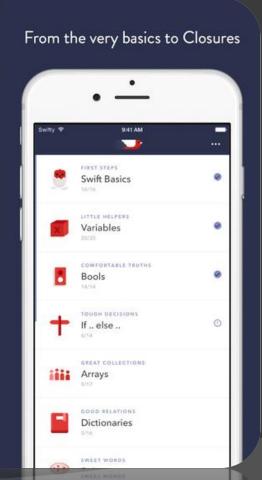
Solve the challenge by choosing the operators that will work best so that Byte collects all the gems and toggles open the switches.

```
for i in 1...6 {
    moveForward()
    if isOnClosedSwitch && isBlocked {
        toggleSwitch()
        turnLeft()
        moveForward()
}
```



Swifly iPhone/iPad, out now

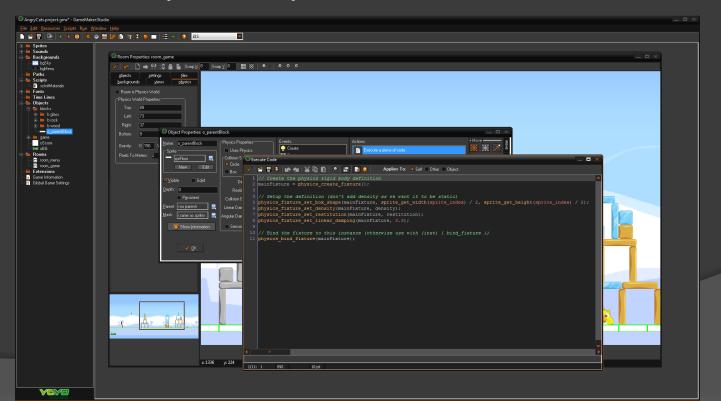






Gamemaker PC (Mac not supported) \$50-\$800

Graphical Object Programming and "Real" Code Very Robust, Built for Games Can Publish to iOS, Android, PC, Not as Easy as Stencyl



Unity3D PC Essentially Free -

"Real" Dev Tool, No Hand Holding Very Robust, Built for Games including 3D Can Publish to iOS, Android, PC, Wii, PSN, XBLA and more Professional Development Tool

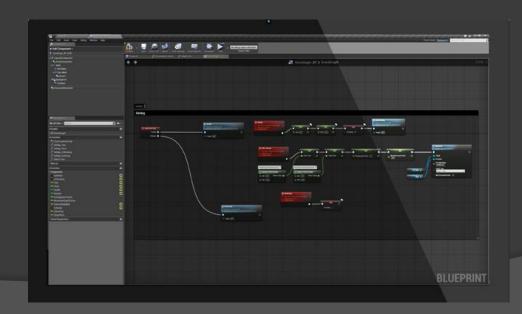


Unreal

and more

"Real" Dev Tool, No Hand Holding
Very Robust, Built for Games including 3D
Can Publish to iOS, Android, PC, Wii, PSN, XBLA

Professional Development Tool







RESOURCES: ASSETS/TOOLS

Extra Credits

- www.youtube.com/user/ExtraCreditz
- Videos about game design, theory, history



Gamasutra

- www.gamasutra.com/
- Tech, Career tutorials



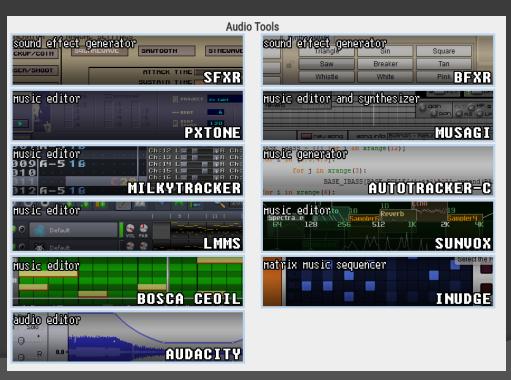
Pixel Prospector

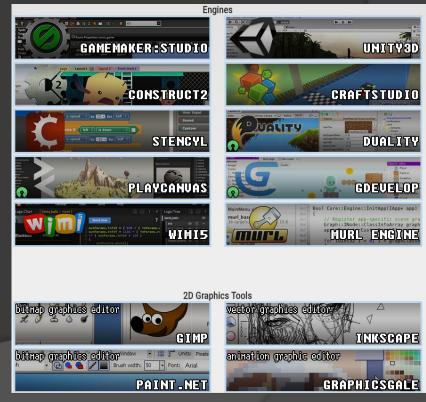
- www.pixelprospector.com
- Collection of Indie development assets and links



Ludum Dare Tool List

- http://ludumdare.com/compo/tools/
- Collection of Indie development assets and links





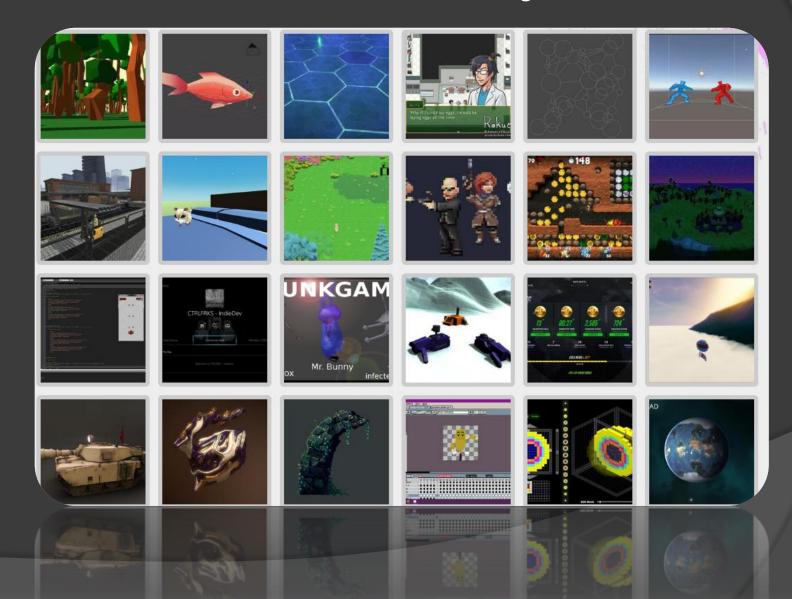
Hour of Code Code.org







#screenshotsaturday



Engines (very partial list)

- Unity
 - unity3d.com
- Unreal
 - unrealengine.com
- GameMaker
 - yoyogames.com/gamemaker
- Scratch
 - scratch.mit.edu
- Twine
 - twinery.org

Miscellaneous Resources

- Business and Legal
 - www.gamesindustry.biz/
- Art Critic and Technical
 - polycount.com/
- VR Overview
 - www.roadtovr.com/
- Curated links to tutorials and assets
 - zeef.com
- VR Tutorials
 - github.com/misslivirose/learnvr
 - www.packtpub.com/books/content/cardboardvirtual-reality-everyone

Miscellaneous Resources

- International Game Developer Association
 - www.igda.org/
- Programming lessons
 - www.codecademy.com
- Math, Physic, Programming lessons
 - www.khanacademy.org
- Games for Change
 - www.gamesforchange.org/
- Pixar in a Box
 - www.khanacademy.org/partner-content/pixar



Miscellaneous Resources

- Black Girls Code
 - www.blackgirlscode.com/
- Girls Who Code
 - girlswhocode.com
- Women Programmer Bootcamp
 - adadevelopersacademy.org/
- learntocodewith.me/posts/13-placeswomen-learn-code/
- Women Programmer Support
 - www.girldevelopit.com

RESOURCES: GAME JAMS

Game Jam

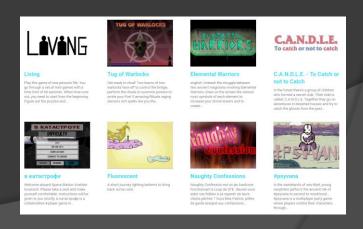
- Make a game in a short time (2 7 days)
- Build a Community
- Learn new skills
- Hold your own
- Or join on line
- Theme Based



Global Game Jam

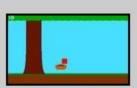
- World Wide
- Annual
- Very Large
- Very Organized
- Next one: January 20-22 2017
- Has events in Portugal





Ludum Dare

- World Wide
- More Frequent (every few months)
- Mini Ludum Dare



Apple Catch Josho



Catch the Butterfly fedor2612



Crappy Tree House FireFlame74



Freeze Ashimleat



Hornet Pick Up derpybunneh



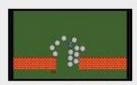
Little Red Running
OutbackPixels



Rayuela XXI icattamaranyk



Sandcastle blueberry_thief



SuperMC123 SuperMC123



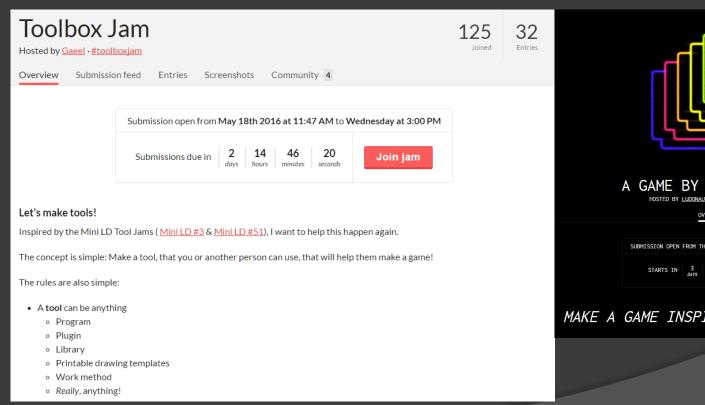
Test Simulator 2016 Xtreme



Top Down Movie
ArrowBlox Studios



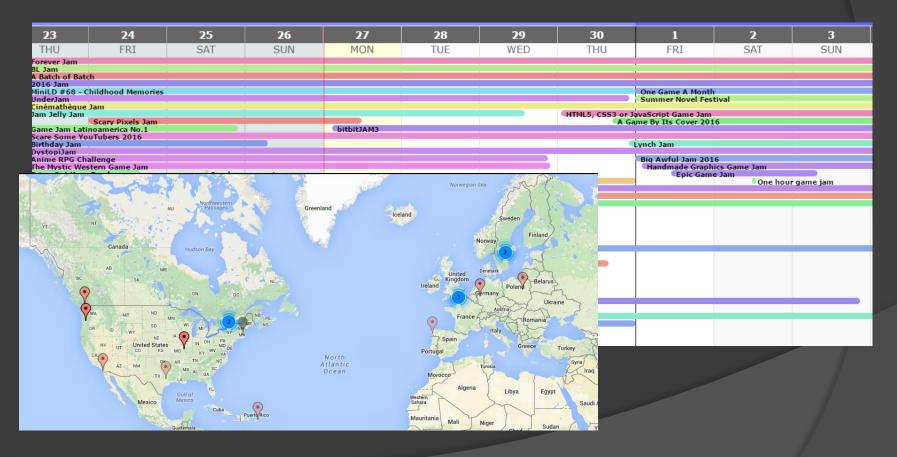
Host Your Own Game Jam Construction Set







Find a Game Jam Near You



Train Jam

- Make a game on a train
- February 22-25 2017 on way to GDC
- (Game Developer Conference)



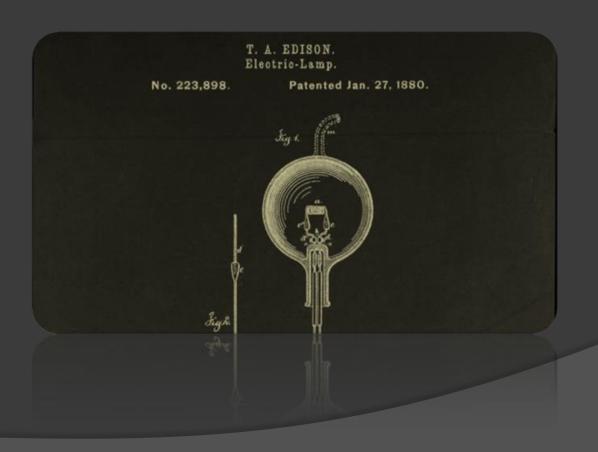
CONCLUSIONS

"Failure isn't only an option, it is a requirement." Games Are Iteration



"I have not failed. I've just eliminated one thousand ways that won't work."

Thomas Edison



QUESTIONS?



Download this talk at: http://bit.ly/Portugal_JW

GAMES FOR GOOD



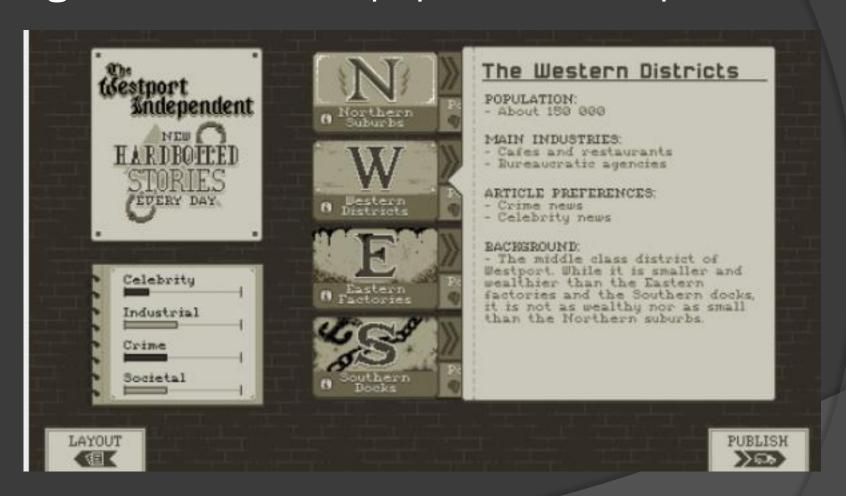
This War of Mine

- Survive as a civilian in a war zone
- Food, Shelter, Medicine, Sleep, Warmth



Westport Independent

A game about Newspaper censorship



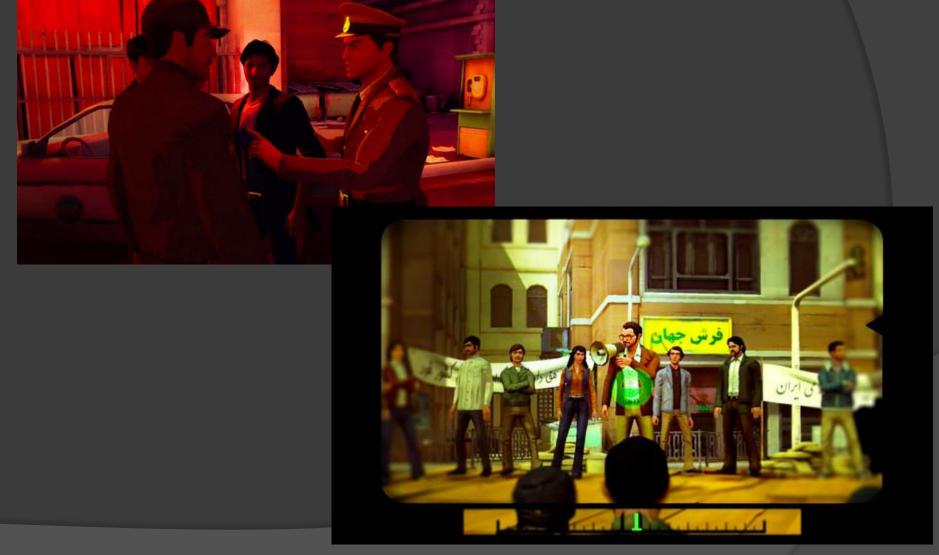
Stay open, keep staff alive, increase circulation. Do you lead population in revolt or roll over?



1979: Iranian Revolution



Photography the revolution. Which side do you support?



Cart Life A game about income inequality







PRESS THE LEFT OR RIGHT ARROW KEY TO NAVIGATE THIS MENU.

TO CONFIRM YOUR CHOICE, PRESS ENTER.

OPERATION:

PRODUCT:

PRICE

SPEED

MONEY: \$2250.00

FOLLOWING MONTHS OF TURMOIL, ANDRUS IS SEEKING TO REBUILD HIS LIFE BY STARTING A NEWSPAPER STAND IN A NEW TOWN WITH HIS CAT, MR. GLEMBOVSKI.

CHALLENGE:

SPECIAL:

ADDICTION:

WORK HARDER. HARD WORKER.

Papers, Please



Time/Resource Management

Dystopian Future, catch smugglers, feed your family



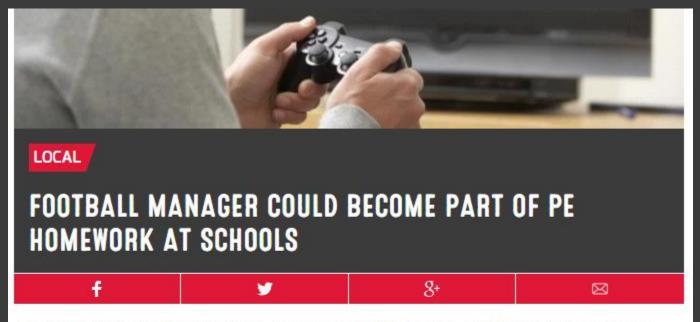
SimCity/Skylines

Urban Planning (taxes, roads, police and Aliens)





Football Manager Rules Education



A TEACHER today said video games, such as Football Manager, could be introduced to PE classes in North-east schools.

The potential plans were discussed during a meeting of the Scottish Association of Teachers of Physical Education.

The concept was brought forward by Len Almond, former foundation director of the British Heart Foundation National Centre, and could see games such as Football Manager and Just Dance being introduced to physical education lessons.

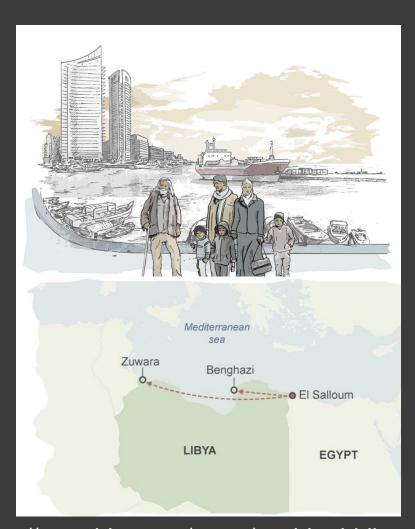
Football Manager

- Salary/Wage Budgets
- Math Principles, Averages
- Economic BasicsSupply and Demand
- Wage Structure





Syria





http://www.bbc.com/news/world-middle-east-32057601 http://www.desura.com/games/endgamesyria

That Dragon Cancer

 One family's interactive story of cancer, faith, love, hope and loss



ANNOUNCING MINECRAFT: EDUCATION EDITION



Arriving this summer, the new title aims to reach more educators around the world with a richer set of features and a thriving community.



Lesson Plans

We have provided lessons spanning primary, intermediate, and secondary school for use with your students. Also consider existing curriculum that could be adapted to use Minecraft: Education Edition.

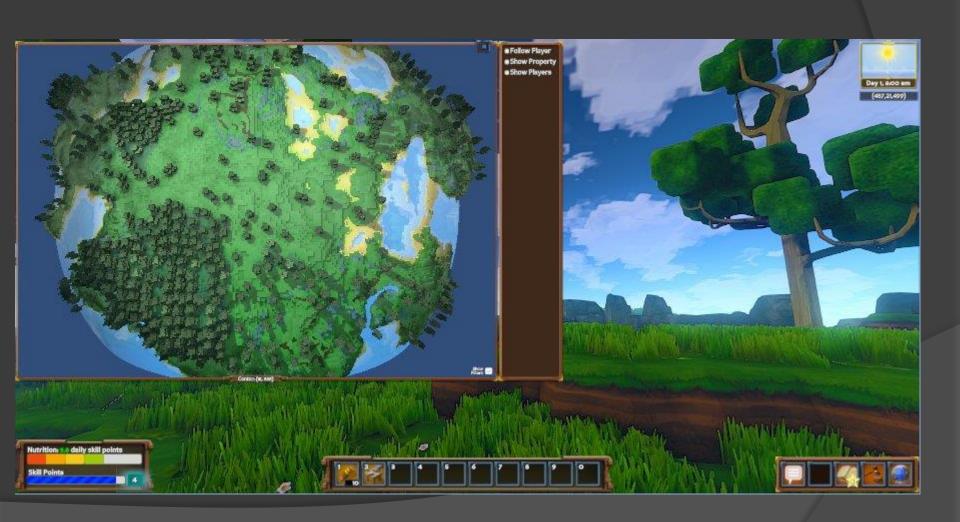
Ages 5-9	Ages 10-13	Ages 14+
Creating A Virtual Community	Preventing Urban Sprawl	City Planning
Factors & Multiples	Loss of Biodiversity	Sustainable Living
Landmarks In The Community	Ignoring Climate Change	Solar Planning
Story Setting	Fraction Stories	Rube Goldberg Machines
State History	Deforestation	
	Storytelling (Baddlands)	

Hey educators, want to submit your lesson plans and provide curricular resources for your peers? Click below to upload your lesson, and we'll get in touch when it's published.











How Pollution And Hydrology Work



How The Player-Run Criminal Justice System Works (PvP)



How Land Ownership Works



How The Player-Run Economy Works

CLASSROOM SPECIAL

\$500

A digital copy of the game for every student and teacher in a classroom of your choice. Students for the next five years in that class will receive the game for free (up to 100 keys per year). Students will have the option to alpha/beta test the game as a group and participate in the development, listing their names in the credits if desired.

Unique ability to tame a wolf and a hare (applies to one user).

Access to source code and art assets of Eco. Ability to submit changes for possible integration. Direct connection with the team and ability to chat with them and share task planning.

Includes four digital copy of the game. Includes versions alpha, beta and final (Steam key). In-game icon as an alpha backer.

One membership on the development forums and Slack.

Civilization EDU (2017)

- Educational Support for Civilization
- Franchise since 1991
- Lesson Plans





www.engadget.com/2016/06/24/civilizationedu-takes-the-strategy-franchise-to-school/

Queue





Videogames to treat PTSD via Exposure Therapy





Tetris used to treat PTSD

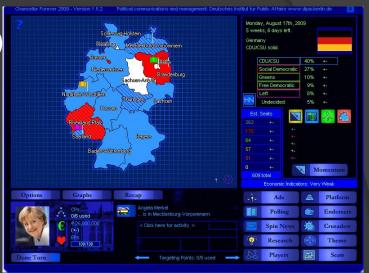
interrupts involuntary recall of traumatic events

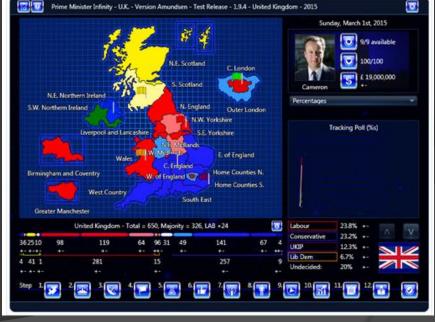


http://www.militarytimes.com/story/military/benefits/health-care/2015/07/16/tetris-videogames-could-be-key-to-preventing-ptsd/30191539/

Election Simulatio









Buy ads
Hire advisors
Give speeches
Raise money
Win Endorsements







http://www.politicalmachine.com/

Chore Wars/Habit RPG

Turn Doing the Dishes and Taking Out the Trash into an RPG





- Gamification of your Classroom
- Reward students, analytics



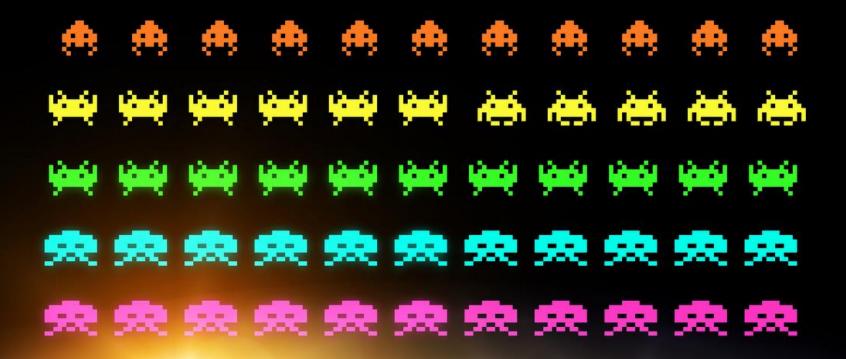
Increases student motivation through real risks and rewards.

Teaches meaningful collaboration
by placing students in teams and
making their success interdependent.

Improves classroom behavior
by gamifying the classroom
experience and making learning fun!

RESOURCES: SPACE GAMES





SPACE GAMES



Kerbal Space Program

- An approachable, serious simulation, with a goofy exterior.
- Design, test, build and fly your own rocket designs using realistic physics principles
- Educational version with lesson plans and standards alignment



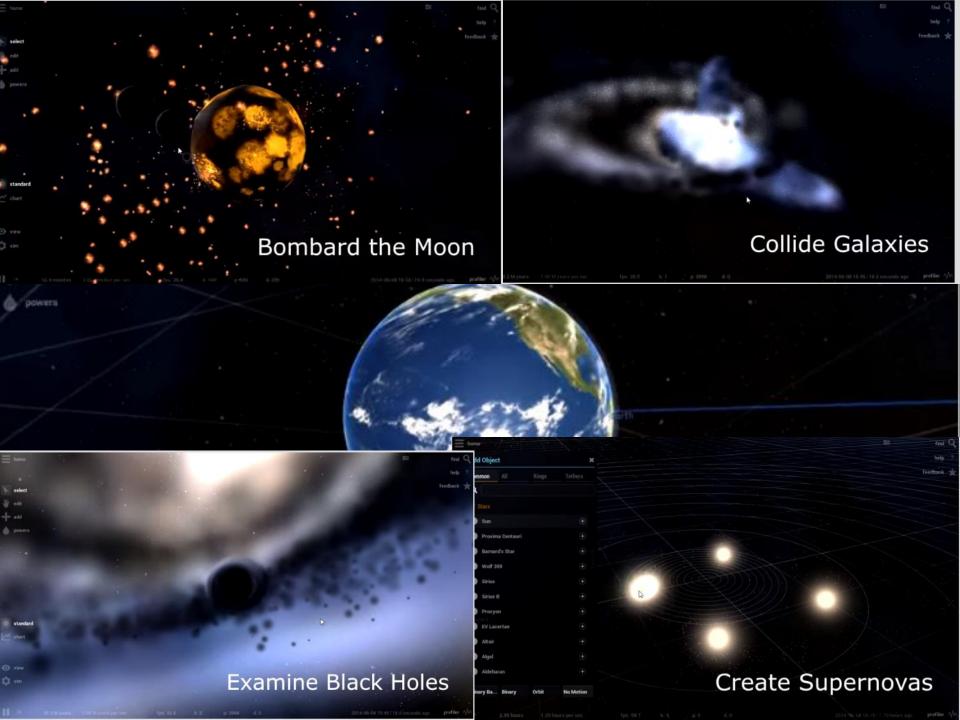


Apollo VR Mission

- Historically accurate spacecraft interiors and exteriors
- Original NASA cockpit audio and data from 1969
- Relive the entire mission





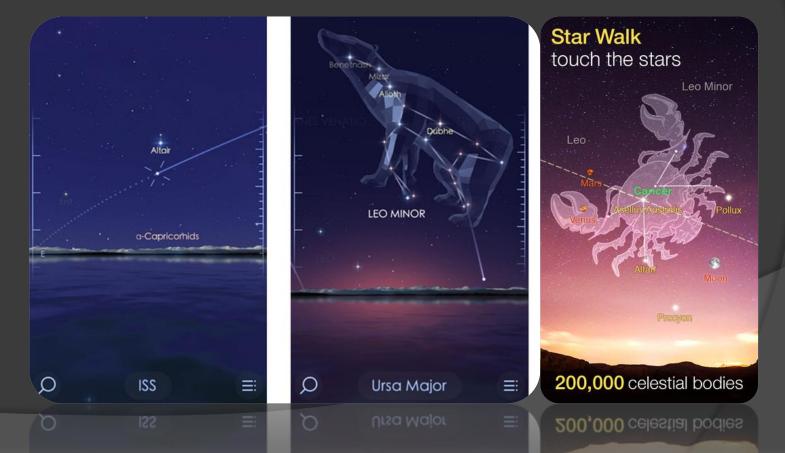


Universe Sandbox

- Simulate Gravity/Compress Time
- Collide Planets and Stars
- Model Climate Change
- Create Supernovas
- Build Planets, Stars, Solar Systems
- Examine Black Holes

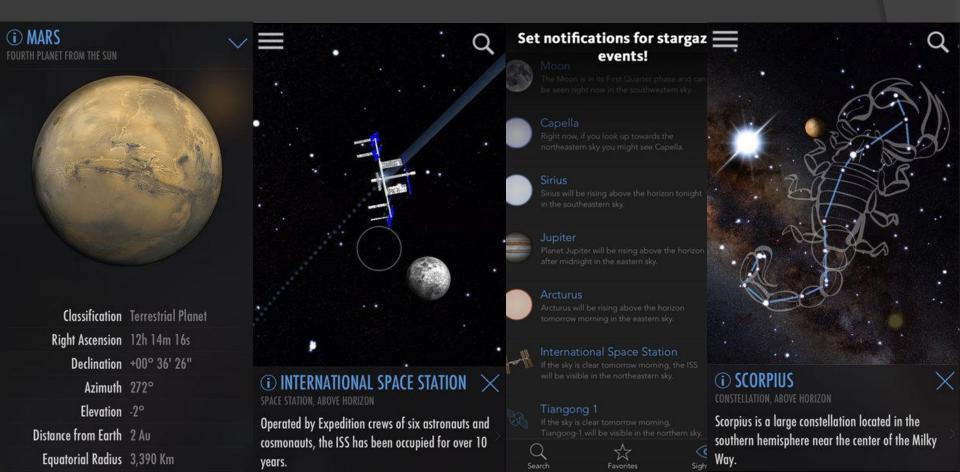
Starwalk for Smartphone

 Point your phone at the sky and find stars, consolations and more.



SkyView for Smartphone

Point your phone at the sky and find stars, consolations and more



QUESTIONS?



Download this talk at: http://bit.ly/Portugal_JW

RESOURCES: VR

VR/AR HMD



VR/AR Success

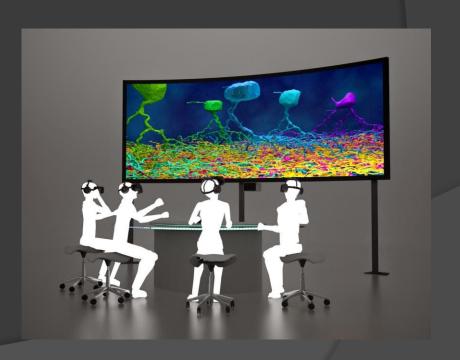
- Untethered
- Social
- Walled Garden
- Killer App



- Untethered
 - No cables to trip over
- Social
- Walled Garden
- Killer App



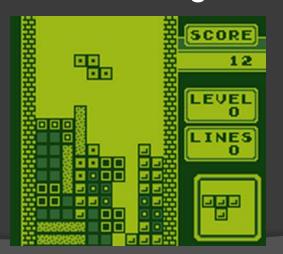
- Untethered
- Social
 - We are social animals
- Wall Garden
- Killer App

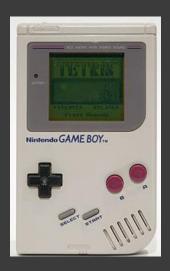


- Untethered
- Social
- Walled Garden

- O Free: + O Free . . Demo . 2048 2048 2048 puzzie game O Free + Pres . free . 2048 2048 2048 with Kivy number puzzle G Free . * Dine +
- High enough walls to protect customers, low enough walls to allow innovation
- Killer App

- Untethered
- Social
- Walled Garden
- Killer App
 - We will forgive any limitation, if it is fun





- Empathy Machine
- Time Machine
- High Consequence Training
- Desencencitization/Stress Inoculation





